

ing through eight months, in which not only the temperature of the body is noticed, but also the frequency of the pulse and of respiration, and the temperature of the air.

## GEOLOGICAL SOCIETY.

Feb. 26, 1845.—A paper was read by Mr. Lyell, "On the Miocene Tertiary Strata of Maryland and Virginia, and North and South Carolina."

These rocks of the middle tertiary period are chiefly exhibited between the hill country and the Atlantic, and form a band of low and nearly level country, almost 150 miles wide, and not 100 feet high. They are assumed to belong to this period, because they are seen resting on the eocene deposits, and exhibit about the same proportion of recent species. The United States miocene beds consist chiefly of incoherent sand and clay, and the sandy beds, otherwise barren, have often been fertilized by the use of shell marl. In the suburbs of Richmond, Virginia, there is however a remarkable bed of siliceous sand, derived from the cases of infusorial animalcules. The paper was accompanied by comparative tables and lists of the fossils.

A paper, also by Mr. Lyell, "On the White Limestone and other Eocene Tertiary Formations of Virginia, South Carolina and Georgia."

The eocene beds extend chiefly to the south of the miocenes described in the foregoing paper, and are very widely spread in the Southern States on the shores of the Atlantic. The mineral character of the beds in the north is so like that of the cretaceous series, that were it not for the fossils, they might readily be mistaken; but towards the south a new mineral type is put on, and the rocks consist of highly calcareous white marl and white limestone. In point of fact, there seems to be as great a chasm between the cretaceous rocks and the tertiaries in America as in Europe.

A second part of Mr. Lyell's paper gave an account of a series of rocks, called in America the Burr-stone, a siliceous rock, containing fossil sponges, and belonging, it would seem, to the upper division of the eocene period.

March 12.—A communication was read by Prof. Sedgwick, "On the Comparative Classification of the Fossiliferous Slates of North Wales, with the corresponding deposits of Cumberland, Westmoreland and Lancashire."

The object of the author in this memoir was to give a general account of the Silurian rocks of the lake district of the North of England, comparing them with those of North Wales, so far as he had hitherto investigated the subject. In both there appears to be a series extending through the various members of the Silurian rocks. In the lake district, the Lower Silurian rocks are imperfectly seen, and are not more than 300 or 400 feet thick, the Ash Gill beds being the highest; but the Upper Silurians are admirably shown, and contain characteristic fossils. Of these latter, the Coniston limestone

and the Coniston flags form an important group as much as 1200 or 1400 feet thick, and correspond with the Denbigh flags of North Wales and the Wenlock shale and limestone of the Silurian system. The Ireleth slate and grits succeed and occupy a considerable space, and must be of very great thickness. These higher beds in Cumberland abound with *Terebratula Navicula*, but above them are remarkable bands with *Asterias*, while the upper portion is full of fossils, the prevailing type of which is Upper Ludlow.

April 2.—A paper was read by Mr. Austen, "On an Aërolite said to have fallen near Lymington, Hants."

A paper was also read by Capt. Bayfield, R.N., "On the Junction of the Transition and Primary Rocks of Canada and Labrador."

April 16.—A paper was read by Mr. Macintosh, "On the Supposed Evidence of the former existence of Glaciers in North Wales."

Mr. Macintosh combated the opinion of Dr. Buckland as to the origin of scratches and grooves on various rocks, referring these appearances, in many cases, to structural phenomena.

April 30.—A paper was read by Mr. Murchison, "On the Palaeozoic Deposits of Scandinavia and the Baltic provinces of Russia, and their relations to *Azoic* or more ancient crystalline rocks, with an account of some great features of dislocation and metamorphism along their northern frontiers."

In this paper Mr. Murchison gave a general outline of the result of his recent examination of Northern Europe, and the conclusions to which he has arrived, chiefly with reference to the classification of a large tract of country before undescribed on a large and comprehensive scale.

May 14.—An extract was first read from a letter by Dr. A. Gesner, "On the Gypsiferous Red Sandstone of Nova Scotia."

A paper was read by Mr. Austen, "On the Coal Beds of Lower Normandy."

The chief object of the author was to describe the actual geological position of these small basins, and suggest that they might rather be of the Permian than the true Carboniferous period.

Dr. Mantell read a paper, entitled "Notes of a Microscopical Examination of the Chalk and Flint of the South-east of England, with remarks on the Animalcules of certain Tertiary and Modern Deposits."

This paper is given entire in our present Number, p. 73.

A paper was read by Mr. Bowerbank, "On some specimens of Pterodactyl recently found in the Lower Chalk of Kent."

May 28.—A communication was read, "On the Geology of Lycia." By Prof. E. Forbes and Lieut. Spratt, R.N.

The authors stated, that the rock forming the greater part of Lycia consists of the *scaglia*, or Apennine limestone, a series not very distinctly defined, and that near the river Xanthus another rock of greenish sandstone, whose age was not determined, rested conformably on the *scaglia*. In other places true tertiary beds, both marine and freshwater, overlie the *scaglia*; and of these the marine are the most ancient, and, from the fossils which occur in the different beds, they are found to be all of the same age. The authors then described

the districts in which the tertiary marine beds appear, some of them being from 2000 to 3000 feet, and others at a still greater elevation above the sea-level. The freshwater tertiaries of Lycia are much more extensive than the marine beds, and extend over the district at heights of 200 or 300 feet above the plain. They consist of marls, capped by flat tables of conglomerate limestone. The relative age of these tertiary beds is determined by the presence of both marine and freshwater strata in the two great valleys of the Xanthus, the former being identified with the Bordeaux miocenes, and the latter therefore being much newer than the eocene freshwater tertiaries of Smyrna. A considerable mass of travertine is found in the great plains of Pamphylia, and it forms cliffs of considerable height, through which the rivers pour. Certain recent changes of level were also noticed, which had attracted the attention of Sir C. Fellows. In conclusion, the authors consider that the scaglia, the formation of most ancient date, was deposited as fine sediment in a deep sea, and was in progress during the whole of the secondary, including the cretaceous, epoch; the evidence of this consisting in the remarkable mixture of fossils observable in Mount Lebanon and elsewhere, and the great thickness, the extent, and the conformable superposition of the different beds. The sandy beds resting on the scaglia seem to have been more recent than the miocene marine strata, the presence of which marks a great change in elevation. This change was more than paralleled by a converse one of depression, producing lakes in which the freshwater tertiary beds were deposited, and which have been since drained by changes in level still going on.

A short notice was read, being the translation of a memoir by the Baron Leopold von Buch, "On a new family of Crinoidal Animals, called *Cystideæ*."

The stony cases of these animals differ from Encrinites chiefly in the absence of arms and the presence of ovarial apertures in the plates. They are found abundantly in the lower beds of the Silurian series, chiefly in Scandinavia.

A paper was read, "On the Relation of the New Red Sandstone to the Carboniferous Strata in Lancashire and Cheshire." By E. W. Binney, Esq.

The author endeavoured to show that the Lancashire coal-field, although of great thickness, does not exhibit a passage upwards into the new red sandstone, but that it is a more perfect series than that in the west of Yorkshire and Derbyshire. He also supposes that the coal-measures are generally thrown down by the various faults, the dislocation being of some extent; that these measures continue unaltered beneath the upper beds; and finally, that the lower portions of the new red sandstone are but imperfectly exhibited in the coal-field in question.

#### ASIATIC SOCIETY.

June 21.—Sir G. T. Staunton, Bart., M.P., in the chair.

Mr. A. Bettington, of the Bombay Civil Service, read a paper "On certain Fossils procured by himself on the Island of Perim, in the *Ann. & Mag. N. Hist.* Vol. xvi.

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